



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,309	02/26/2004	Pyung-Lae Kim	IK-0062	3428
34610	7590	05/24/2007	EXAMINER	
KED & ASSOCIATES, LLP P.O. Box 221200 Chantilly, VA 20153-1200			WATKO, JULIE ANNE	
		ART UNIT	PAPER NUMBER	
		2627		
		MAIL DATE	DELIVERY MODE	
		05/24/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.	Applicant(s)
10/786,309	KIM, PYUNG-LAE
Examiner	Art Unit
Julie Anne Watko	2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 16 January 2007.
2a) This action is FINAL. 2b) This action is non-final.
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-16 and 18-25 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) Claim(s) _____ is/are allowed.
6) Claim(s) 1-16 18-25 is/are rejected.
7) Claim(s) _____ is/are objected to.
8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
10) The drawing(s) filed on 26 February 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892) **
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
5) Notice of Informal Patent Application
6) Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 16, 2007, has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "the end of the folded portion" in line 2. There is insufficient antecedent basis for this limitation in the claims.

Claim 16 recites the limitation "near" in line 2. The term "near" in claim 16 is a relative term which renders the claim indefinite. The term "near" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Wiens et al (US Pat. No. 4967296).

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

The product by process limitations in these claims are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessman*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process limitations or steps, which must be determined in a “product by process” claim, and not the patentability of the process limitations. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. Note that the applicant has the burden of proof in such cases, as the above case law makes clear.

As recited in independent claim 1, Wiens et al show a flexible cable 66, comprising: a flexible cable main body 66 having one end configured to connect to a first part 22 and the other end configured to connect to a second part (“an appropriate connector (nor shown) is then attached to the opposite end of the PCC 66 for interconnection to associated electronic circuitry

Art Unit: 2627

external to the disc driver's sealed environment", see col. 4, line 66-col. 5, line 1) on a side opposite to the first part and configured to transmit signals between the first and second parts (see above regarding intended use recitations; see also col. 5, lines 29-31, "to direct the low amplitude read data signals to amplification electronics"), wherein at least one 22 of the first and second parts is movable ("carriage which is reciprocatably guided", see col. 1, line 37); and a folded portion (see appearance of 66 in Fig. 1), two strips of said cable extending from the folded portion in the same direction initially (see appearance of 66 in Fig. 1), wherein movement of said at least one movable part 22 of the first and second part is configured to (inherently) occur between a first position and a second position whereby corresponding movement of said flexible cable main body is configured to occur only to one side (a lower side in the Figures) of the folded portion connected to the at least one movable part 22.

Regarding the limitation "formed by folding a portion of the cable main body so that two opposing faces are in contact with each other" in claim 1: See above regarding product-by-process limitations. In this case, the claimed folded portion could have been formed by this process.

As recited in claim 7, Wiens et al show that the cable main body is divided into a straight portion and a curved portion (see appearance of 66 in Fig. 2B) with respect to the folded portion and the curved portion is relatively longer than the straight portion (see Fig. 2B).

As recited in claim 8, to the extent understood, Wiens et al show a disk drive (see col. 1, lines 52-60, "used in a Winchester disc drive unit" and "useful in other types of electromechanical memory storage apparatus" and "application to optical memory storage apparatus") comprising the flexible cable 66, wherein the end of the folded portion of the flexible

cable main body not connected to the at least one movable part 22 is vertically aligned with the other part of the first and second part (see appearance of 66 in Fig. 2A).

As recited in independent claim 9, in addition to the above teachings for claim 1, Wiens et al show that the folded portion does not deviate from vertical alignment with the first part 22 (see Fig. 3B), and wherein said second end is (capable of being) vertically aligned with said second part (see above regarding recitations of intended use).

Regarding claim 10: See teachings above for claim 1.

As recited in independent claim 11, in addition to the above teachings for claims 1 and 9, Wiens et al show that a vertex of the curved portion is capable of (see above regarding intended use recitations) not deviating from vertical alignment with the second end prior to movement of the first end.

As recited in claim 12, Wiens et al show that the flexible cable is configured to be capable of (see above regarding intended use recitations) directly connected to an optical pickup of a disk drive (see col. 1, lines 57-60, “application to optical memory storage apparatus wherein an optical transducer or several optical transducers are incorporated in the actuator”).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

Art Unit: 2627

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. The product by process limitations in these claims are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessman*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process limitations or steps, which must be determined in a “product by process” claim, and not the patentability of the process limitations. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. Note that the applicant has the burden of proof in such cases, as the above case law makes clear.

9. Claims 13-16 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiens et al (US Pat. No. 4967296).

As recited in independent claim 13, Wiens et al show a disk drive (“disc drive unit”, see col. 1, line 53; see also col. 1, lines 56-58, “optical memory storage apparatus”) comprising: a main base 10; a pickup base 22 installed on the main base and provided with parts 88 for recording and reproducing signals on and from a disk, including an optical pickup (“optical transducer”, see col. 1, line 58) linearly movable (“reciprocally guided”, see col. 1, line 37)

within a predetermined region (“between a pair of carriage guide rails”, see col. 1, lines 37-38); a board (“associated electronic circuitry”, see col. 4, line 38) and (inherently) configured to control driving of the parts including the optical pickup; and a flexible cable 66 having a folded portion (see appearance of 66 in the figures) formed by folding a portion of a flexible cable main body (see above regarding product-by-process), wherein two strips of cable extend from the folded portion in the same direction and are connected (see appearance of 66 in the figures), respectively, directly to the optical pickup and to the board so as to transmit signals therebetween (see col. 5, lines 29-31, “to direct the low amplitude read data signals to amplification electronics”).

As recited in independent claim 13, Wiens et al are silent regarding the board being fixedly installed on a side of the main base; however, Wiens et al teach that a board may be located inside a sealed environment (see col. 5, lines 18-27).

No teaching, suggestion nor motivation is required to establish a *prima facie* case of obviousness. *KSR International Co. v. Teleflex Inc.*, 550 U.S. (2007). Furthermore, it is obvious to try various options when a finite number of options exist. *KSR International Co. v. Teleflex Inc.*, 550 U.S. (2007).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to fixedly install the board on a side of the main base. The rationale is as follows: one of ordinary skill in the art would have been motivated to arrive at the claimed location while trying the finite number of locations available for fixing the board.

Moreover, there is no invention in relocating known parts, when the functioning of the apparatus is not changed by the relocation. In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

As recited in claim 14, Wiens et al are silent regarding a tray configured to move inside and outside the main base so as to move the disk between a loading position and an unloading position.

Official notice is taken of the fact that it was known in the art at the time the invention was made to configure a tray to move inside and outside a main base so as to move a disk between a loading position and an unloading position.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to configure a tray to move inside and outside the drive of Wiens et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to add a tray in order to transport the recording medium to and from a transducing position, and to enable changing media by the user so as to increase a quantity of data reproduced as is notoriously well known in the art.

As recited in claim 15, Wiens et al show that the cable main body is divided into a straight portion and a curved portion with respect to the folded portion (see appearance of 66 in the figures).

As recited in claim 16, to the extent understood, Wiens et al show that the folded portion is formed near one of the optical pickup (see Fig. 3B) and the board.

As recited in claim 23, Wiens et al show that movement of the optical pickup is configured to (inherently) be between an inner end (see Fig. 2B) and an outer end (see Fig. 3B)

Art Unit: 2627

of said predetermined region, wherein corresponding movement of said flexible cable 66 main body is configured to occur only to one side (a lower side) of a position of the folded portion when said optical pickup is at said outer end (see Fig. 3B).

As recited in claim 24, Wiens et al show that said folded portion and said two strips of cable are vertically aligned (see especially Fig. 2A).

As recited in claim 25, Wiens et al show that said folded portion and said two strips of cable are vertically aligned throughout their respective entire lengths (see especially Fig. 2A, 2B and 3B).

10. Claims 2, 4-6, 18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schultz et al (US PAP No. 20030043508 A1) in view of Wiens et al (US Pat. No. 4967296).

As recited in claim 2, Schultz et al show a folded-state maintaining device 235 configured to maintain a folded state of a folded portion.

As recited in independent claim 1, from which claim 2 depends, Schultz et al show all other claimed limitations (see rejection in the office action mailed November 6, 2006) with the following exception.

As recited in independent claim 1, from which claim 2 depends, Schultz et al are silent regarding two strips of cable extending from the folded portion in the same direction initially, wherein corresponding movement of said flexible cable main body is configured to occur only to one side of the folded portion connected to the at least one movable part.

As recited in independent claim 1, from which claim 2 depends, Wiens et al show two strips of cable extending from the folded portion in the same direction initially, wherein

Art Unit: 2627

corresponding movement of said flexible cable main body is configured to occur only to one side of the folded portion connected to the at least one movable part (see above teachings).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the flexible cable of Schultz et al with two strips of cable extending from the folded portion in the same direction initially, wherein corresponding movement of said flexible cable main body is configured to occur only to one side of the folded portion connected to the at least one movable part as taught by Wiens et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to provide an extremely compact configuration and to shorten the flex cable length, which is critical for performance improvements, and to provide a balanced, light weight, structurally rigid carriage which may be easily assembled and maintained, and to achieve a significant advantage in minimizing the length of the flex cable, contributing to the compactness of the design and avoiding any possibility of the flex cable interfering with the movement of the driven carriage as taught by Wiens et al (see col. 3, lines 41-45, and col. 6, lines 37-50).

As recited in claims 4-6, Schulz et al are silent regarding folded plates, folding clips and wrapped tape.

Folded-state maintaining devices are known in the art. Specifically, adhesives, tapes, folded plates and clips with insertion slots are known as recited in claims 4-6.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a folded plate, clip, or wrap tape as a folded state maintaining device. The rationale is as follows: one of ordinary skill in the art would have been motivated to prevent

Art Unit: 2627

unfolding so as to preserve the compactness of the device while avoiding interference with other parts of the device as was apparent to a person of ordinary skill in the art.

Regarding claim 18: See teachings, rationale, and motivation for combining teachings above for claim 2.

Regarding claims 20-22: See teachings, rationale, and motivation for combining teachings above for claims 4-6.

11. Claims 3 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schultz et al (US PAP No. 20030043508 A1) in view of Wiens et al (US Pat. No. 4967296) as applied to claims 2, 4-6, 18 and 20-22 above, and further in view of Takahashi et al (US PAP No. 2004025785 A1).

Schultz et al show a flexible cable as described above.

As recited in claims 3 and 19, Schultz et al are silent regarding whether the folded-state maintaining device comprises an adhesive member configured to bond both faces of the folded portion to each other.

As recited in claims 3 and 19, Takahashi et al show an adhesive member 24.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the adhesive member of Takahashi et al on the flexible circuit of Schulz et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to prevent stray movement of the flexible circuit so as to avoid interference with moving parts as is notoriously well known in the art.

Response to Arguments

12. Applicant's arguments with respect to claims 1-16 and 18-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nakano (JP 2005-322349 A) and Park et al (US Pat. No. 6910218 B2) show drives with flexible cables.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Anne Watko whose telephone number is (571) 272-7597. The examiner can normally be reached on Monday-Friday, 10AM to 6:30PM.

Art Unit: 2627

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Julie Anne Watko
Primary Examiner
Art Unit 2627

May 22, 2007
JAW

A handwritten signature in black ink, appearing to read "Julie Anne Watko". The signature is fluid and cursive, with a large, stylized "J" at the beginning.